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| 10/057,441 | 01/25/2002 | Ivan Fernandez-Corbaton | 010379 | 9642 |
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| | | | ART UNIT 2125 | PAPER NUMBER |
| | | | NOTIFICATION DATE 11/28/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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nanm@qualcomm.com

Office Action Summary

Application No.

10/057,441

Applicant(s)

FERNANDEZ-CORBATON ET AL.

Examiner

Carlos Ortiz-Rodriguez

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14, 16-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-14, 16-20, 22 AND 24-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/18/07 have been fully considered but they are not persuasive. Please note that new ground(s) of rejection is applied to the amended claims.
2. Regarding the rejection under 35 U.S.C. 101, it should be noted that this rejection is necessary due to claim interpretation. It is acknowledge that the claims rejected under 35 U.S.C. 101 may be interpreted be considered statutory when interpreted as hardware. The Examiner believes that the disclosure of the Specification of the Instant Application provides enough support for the *hardware* embodiment/interpretation of the claimed invention. However, the Examiner also notes that the disclosure of the Specification **also** provides enough support for the *software* embodiment/ interpretation of the claimed invention. Therefore when interpreting the claims in light of the Specification, the claims are considered as non-statutory when interpreted as software per se. If the Specification was limited only towards the hardware embodiment then there would be no reason to interpret the claim language as non-statutory. However, the claims are written in a way to invoke 35 U.S.C. 112, sixth paragraph but when the Examiner reads the Specification to determine what "means" are being claimed, more than one embodiment is found and one of these embodiments contains non-statutory subject matter.

After reading Applicant's response it seems like Applicant's position is that the

Specification states that these means are stored in a memory and executable by a processor, however independent claims 11 and 16 do not indicate that these means are stored in a memory and executable by a processor. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims.

Applicant is reminded that software per se is not patentable. It must be stored in a computer readable medium. It is not clear if applicant's position is that software is patentable if it is done invoking 35 U.S.C. 112, sixth paragraph or that none of the present claims are directed towards software per se (regardless of the Examiner's software interpretation explained above). In both cases, the Examiner disagrees, and believes that the present rejections are proper. The Examiner believes that the manner in which the claims are written is a correct format as provided by 35 U.S.C. 112, sixth paragraph, however the problem is not the format of the claims but the multiple interpretation of the claims due to the manner in which the Specification is written. If system claims 11 and 16 are amended to include a processor and a memory then the claims would comply with 35 U.S.C. 101.

Regarding claim 10 Applicants arguments indicate that Freiberg fails to anticipate the claims because Freiberg fails to provide any description of a polynomial having an order greater than 2 that is used as a mathematical model of a predetermined response function. It should be noted that the claim language states "a modeling processor *operable to* generate an nth order polynomial." The recitation that an element is "operable to" perform a function is not a positive limitation and only requires the ability to

so perform. This non-positive limitation does not distinguish the claim system from the prior art. It is considered that the prior art is capable of performing such function.

Regarding claims 10 and 16, the body of the claims contains intended use language. The intended use limitations found within the body of the claims do not distinguish the claimed system/method from the prior art because the prior art is capable to perform in such manner. The recitation of a new intended use to a known system does distinguish the claimed system from the prior art.

The intended use limitations are the following: "using the maximum signal" and "using the mathematical model". Basically, claims 10 and 16 describe a system comprising: a searcher, and a modeling processor. The prior art of record, Freiberg et al., shows a searcher and a modeling processor. Given the maximum signal and correlation signal levels from predetermined points in time adjacent the selected time, Freiberg's modeling processor would be operable/capable to generate said nth order polynomial to determine the time associated with a peak correlation signal level. The descriptive language states that n is greater than two. This limitation is not an element or function of the claimed system and only further describes the type of polynomial which the modeling processor is "operable to" generate. Although Freiberg et al. shows the system of claims 10 and 16, Freiberg et al does not show the method of claim 23. In other words, the prior art does not show the method of claim 23 but it is operable/capable to perform said method.

It should also be noted that claims 1 and 10, contain similar non-positive functional language for example, "a searcher operable to" and "a modeling processor

operable to". Additionally, claims 1, 10, 11, 16, 17 and 23 contain similar intended use limitations for example, "using the maximum signal" and "using the mathematical model".

Allowable Subject Matter

3. Claim 23 is allowed.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 11-14 and 16 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The preamble of independent claims 11 and 16 recite a system, but when the "analysis means" and the "modeling means" described in the body of the claims are interpreted as software/program elements, it appears reasonable to interpret this recited system as software per se. The "analysis means" and the "modeling means" are being interpreted as software/program elements because Applicant's specification state that the "analysis means" and "modeling means" could be program codes as shown below.

[0031] One skilled in the art will appreciate that the system 100 illustrated in FIG. 2 is a functional block diagram rather than a listing of specific components. For example, although the searcher 116 and signal analyzer 120 are illustrated as two separate blocks within the system 100, they may be in fact embodied in one physical component, such as a digital signal processor (DSP). They may also reside as program codes in the memory 104, such code being

operated on by the CPU 102. The same considerations may apply to other components listed in the system 100 of FIG. 2, such as the timer 124.

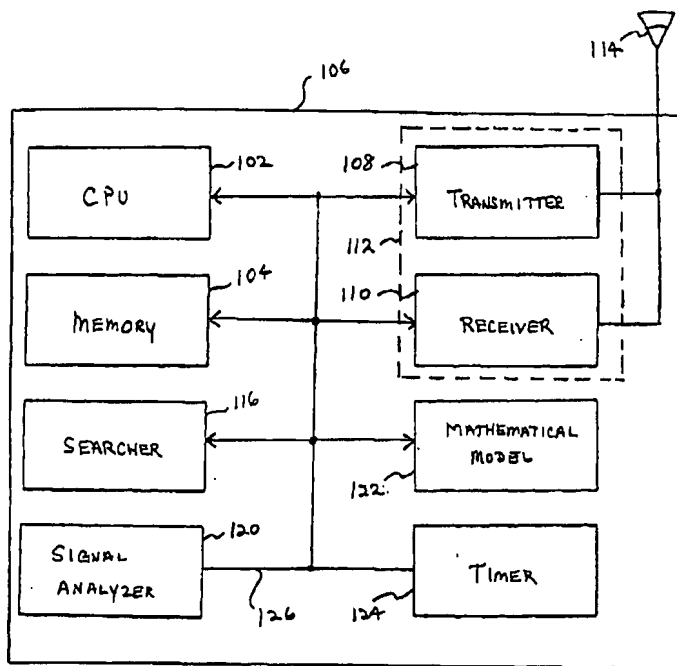


FIG. 2

Regarding the rejection under 35 U.S.C. 101, it should be noted that this rejection is necessary due to claim interpretation. It is acknowledge that the claims rejected under 35 U.S.C. 101 may be interpreted be considered statutory when interpreted as hardware. The Examiner believes that the disclosure of the Specification of the Instant Application provides enough support for the *hardware* embodiment/interpretation of the claimed invention. However, the Examiner also notes that the disclosure of the Specification **also** provides enough support for the *software* embodiment/ interpretation of the claimed invention. Therefore when interpreting the claims in light of the Specification, the claims are considered as non-statutory when interpreted as software per se. If the Specification was limited only towards the hardware embodiment then there would be no reason to interpret the claim language as non-statutory.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4, 6-9, 11-14, 17-20, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freiberg et al. EP1089452 in view of Kohli et al. U.S.

Publication No. 2002/0015439.

It should also be noted that claim, contains non-positive functional language for example, "a searcher operable to" and "a modeling processor operable to".

Additionally, claims 1, 11, 17 contain intended use limitations for example, "using the maximum signal" and "using the mathematical model":

Regarding claims 1-4, 6-9, 11-14, 17-20, 22 and 24-26, Freiberg et al. discloses a system for determining signal time of arrival in a wireless communication system, comprising: a searcher operable to analyze received signals to determine a correlation signal level at predetermined points in time (Abstract), the searcher determining a maximum signal level at a selected one of the predetermined points in time (Abstract L6); and a modeling processor operable to generate an nth order polynomial mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the

selected time (Paragraph 0049), the modeling processor using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time being used to determine coefficients in the mathematical model (Paragraph 0045-0047); wherein the correlation signal levels are based on received signal strength of the received signals (Paragraph 0015); wherein the coefficients in the mathematical model are used to determine the time associated with a peak value of the mathematical model (Paragraph 0045); wherein the mathematical model is a second order mathematical function with three coefficients, the maximum signal level and two correlation signal levels from predetermined points in time adjacent the selected time being used to determine the three coefficients in the mathematical model; wherein the mathematical model is a quadratic function having the form: $y(x) = ax^2 + bx + c$ (Paragraph 0049).

But Freiberg et al. fails to clearly specify an offset time encoded in the received signals, the offset time identifying a source of the received signal, and a timer configured to provide system time used to measure the offset time.

However, Kohli et al. disclose an offset time encoded in the received signals, the offset time identifying a source of the received signal, and a timer configured to provide system time used to measure the offset time (Page 23, Paragraphs 0237-0246).

Therefore at time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the above invention disclosed by Freiberg et al. and combining it with the invention disclosed by Kohli et al.

One of ordinary skill in the art would have been motivated to do this modification because in order to identify the particular satellite from which the signal was received as suggested by Kohli et al.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 10 and 16 are rejected under 35 U.S.C. 102 (a) as being anticipated by Freiberg et al. EP1089452.

Regarding claim 10, it should be noted that the claim language states "a searcher operable to" and "a modeling processor *operable to* generate an nth order polynomial." The recitation that an element is "operable to" perform a function is not a positive limitation and only requires the ability to so perform. This non-positive limitation does not distinguish the claim system from the prior art. It is considered that the prior art is capable of performing such function.

Regarding claims 10 and 16, the body of the claims contains intended use language. The intended use limitations found within the body of the claims do not distinguish the claimed system/method from the prior art because the prior art is

capable to perform in such manner. The recitation of a new intended use to a known system does distinguish the claimed system from the prior art.

The intended use limitations are the following: "using the maximum signal" and "using the mathematical model". Basically, claims 10 and 16 describe a system comprising: a searcher, and a modeling processor. Freiberg et al., shows a searcher and a modeling processor. Given the maximum signal and correlation signal levels from predetermined points in time adjacent the selected time, Freiberg's modeling processor would be operable/capable to generate said nth order polynomial to determine the time associated with a peak correlation signal level. The descriptive language states that n is greater than two. This limitation is not an element or function of the claimed system and only further describes the type of polynomial which the modeling processor is "operable to" generate.

Furthermore, regarding claims 10 and 16, Freiberg et al. discloses a system for determining signal time of arrival in a wireless communication system, comprising: a searcher operable to analyze received signals to determine a correlation signal level at predetermined points in time (Abstract), the searcher determining a maximum signal level at a selected one of the predetermined points in time (Abstract L6); and a modeling processor operable to generate an nth order polynomial, n being greater than two, mathematical model of a predetermined response function using the maximum signal level and correlation signal levels from predetermined points in time adjacent the selected time (Paragraph 0049), the modeling processor using the maximum signal level and correlation signal levels from predetermined points in time adjacent the

selected time being used to determine coefficients in the mathematical model (Paragraph 0045-0047); wherein the correlation signal levels are based on received signal strength of the received signals (Paragraph 0015); wherein the coefficients in the mathematical model are used to determine the time associated with a peak value of the mathematical model (Paragraph 0045 and 0049).

Citation of Pertinent Prior Art

10. Applicant is respectfully requested to fully consider all the references, in entirety, that appear on the attached list (Form PTO-892). These references disclose subject matter similar to that of applicant's disclosure and may be relied on in a future response to Applicant's remarks or amendments.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Ortiz-Rodriguez whose telephone number is 571-272-3766.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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November 20, 2007



Carlos Ortiz-Rodriguez
Patent Examiner
Art Unit 2125

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